

US EPA ARCHIVE DOCUMENT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

March 13, 2013

OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

VIA E-MAIL

Ms. Jenna Wischmeyer, Attorney
Alliant Energy Corporate Services Legal Department
200 First Street SE
PO Box 351
Cedar Rapids, IA 52406-0351

Re: Request for Action Plan regarding Alliant Energy - Interstate Power & Light Co -
Sutherland Generating Station

Dear Ms. Wischmeyer,

On June 14, 2011 the United States Environmental Protection Agency ("EPA") and its engineering contractors conducted a coal combustion residual (CCR) site assessment at the Alliant Energy - Interstate Power & Light Co - Sutherland Generating Station facility. The purpose of this visit was to assess the structural stability of the impoundments or other similar management units that contain "wet" handled CCRs. We thank you and your staff for your cooperation during the site visit. Subsequent to the site visit, EPA sent you a copy of the draft report evaluating the structural stability of the units at the Alliant Energy - Interstate Power & Light Co - Sutherland Generating Station facility and requested that you submit comments on the factual accuracy of the draft report to EPA. Your comments were considered in the preparation of the final report.

The final report for the Alliant Energy - Interstate Power & Light Co - Sutherland Generating Station facility can be accessed at the secured link below. The secured link will expire in 60 days.

Here is the link: <http://www.yousendit.com/download/UVJqV280QTZPSHlybHNUQw>

This report includes a specific condition rating for each CCR management unit and recommendations and actions that our engineering contractors believe should be undertaken to ensure the stability of the CCR impoundment(s) located at the Alliant Energy - Interstate Power & Light Co - Sutherland Generating Station facility. These recommendations are listed in Enclosure 1.

Since these recommendations relate to actions which could affect the structural stability of the CCR management unit(s) and, therefore, protection of human health and the environment, EPA believes their implementation should receive the highest priority. Therefore, we request that you inform us on how you intend to address each of the recommendations found in the final report. Your response should include specific plans and schedules for implementing each of the

recommendations. If you will not implement a recommendation, please provide a rationale. Please provide a response to this request by **April 15, 2013**. Please send your response to:

Mr. Stephen Hoffman
U.S. Environmental Protection Agency (5304P)
1200 Pennsylvania Avenue, NW
Washington, DC 20460

If you are using overnight or hand delivery mail, please use the following address:

Mr. Stephen Hoffman
U.S. Environmental Protection Agency
Two Potomac Yard
2733 S. Crystal Drive
5th Floor, N-5838
Arlington, VA 22202-2733

You may also provide a response by e-mail to hoffman.stephen@epa.gov, dufficy.craig@epa.gov, kelly.patrickm@epa.gov and englander.jana@epa.gov.

You may assert a business confidentiality claim covering all or part of the information requested, in the manner described by 40 C. F. R. Part 2, Subpart B. Information covered by such a claim will be disclosed by EPA only to the extent and only by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when EPA receives it, the information may be made available to the public by EPA without further notice to you. If you wish EPA to treat any of your response as "confidential" you must so advise EPA when you submit your response.

EPA will be closely monitoring your progress in implementing the recommendations from these reports and could decide to take additional action if the circumstances warrant.

You should be aware that EPA will be posting the report for this facility on the Agency website shortly.

Given that the site visit related solely to structural stability of the management units, this report and its conclusions in no way relate to compliance with RCRA, CWA, or any other environmental law and are not intended to convey any position related to statutory or regulatory compliance.

Please be advised that providing false, fictitious, or fraudulent statements of representation may subject you to criminal penalties under 18 U.S.C. § 1001.

If you have any questions concerning this matter, please contact Mr. Hoffman in the Office of Resource Conservation and Recovery at (703) 308-8413. Thank you for your continued efforts to ensure protection of human health and the environment.

Sincerely,
/Suzanne Rudzinski/, Director
Office of Resource Conservation and Recovery

Enclosure

Enclosure 1

**Alliant Energy - Interstate Power & Light Co - Sutherland Generating Station
Recommendations (from the final assessment report)****CONCLUSIONS**

For the Main Ash Pond, rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Further investigations and studies are necessary. In addition, vegetation on the embankments was too high to inspect the embankments closely.

4.2.1 Hydrologic and Hydraulic*Main Ash Settling Ponds*

Although the small discharge pond was reported to maintain a freeboard of 1.5 feet while passing the 100-year 24-hour design storm, the other two components of the Main Ash Settling Ponds (the Secondary Settling and Polishing Ponds) were inundated and operated as a single pond during the 100-year 24-hour storm event. Additionally, the resulting freeboard of their combined condition, indicated by the storm routing, was just over 6 inches.

In comments to the draft report Alliant Energy states that the conversion to natural gas and resulting lower water level "can clearly handle a 100 year 24 hour storm. AMEC agrees that with the lower static water level from the conversion the Main Pond would be capable of handling the storm. However, with the ability to burn coal and return the ponds to the original condition there is only 6 inches of freeboard during the design storm event.

RECOMMENDATIONS

AMEC recommends an evaluation of the ponds to determine if the freeboard can be increased if the plant returns to burning coal.

4.2.2 Geotechnical and Stability Recommendations

Conventional minimum factor of safety criteria are 1.5 for static long-term stability and 1.0 for earthquake stability (by pseudo-static method). Likewise, if the dam does not meet the above seismic factor of safety, then the stability of the embankment should be analyzed and the amount of embankment deformation or settlement that may occur should be evaluated to assure that sufficient section of the crest will remain intact to prevent a release from the impoundment.

A June 2011 report by Aether, dba, titled *Ash Pond Slope Stability and Hydraulic Analysis*, for the Sutherland Generating Station presents stability analyses for Main Ash Pond. One cross section was analyzed for short term and short term seismic conditions. The location of the cross section was selected to represent the "most critical" area on the south dike.

In comments to the draft report Alliant Energy provided a report by Aether, dba dated July 2012 with revised stability analyses for the Main Pond. Data used for the analyses included recent survey for four sections, and a review and adjustment to more conservative values for strength parameters for the embankment and underlying soils. The resubmission of analysis using total stress parameters are for short term conditions and are still not valid. Aether did perform a new analysis representing long term conditions using the revised data. The results of this analysis indicate a factor of safety of 1.6 for the embankment. The method of analysis appears valid and the result exceeds the required minimum factor of safety. A seismic analysis under effective stress conditions was not provided. AMEC recommends a seismic analysis using effective stress parameters be performed to meet the stability analysis requirements for the Main Pond.

The vegetation on the embankment slopes of the Main Ash Pond was too tall to inspect the embankment closely. No visible signs of major slope failures were observed. AMEC recommends IPL periodically mow the area to allow inspection of the embankments. One of the formal plant inspections could be performed in the winter/early spring months when the vegetation is low and the embankments are more visible. Mowing may be needed at the time of the other inspection and/or inspection by an engineer as recommended below, ideally preceding or following the normal season of heavier rainfall. Mowing should extend at least to the fence on the downstream embankments. Mowing beyond the fence may need to be coordinated with or approved by a regulatory agency as adjacent areas could be classified as wetlands. Maintenance issues such as steep and exposed slopes, and water against the toe of the slope as described in Section 2.4.1 of the final report and other issues discovered after mowing should be promptly addressed to maintain the structural integrity of the embankments.

4.2.3 Inspection Recommendations

Inspection procedures at the Sutherland station include daily, undocumented inspection of the grounds by plant personnel and bi-annual, documented inspections by plant environmental staff. AMEC recommends that Alliant Energy, IPL, revise the bi-annual inspection to reflect the changes in 2006 by completing forms for each impoundment of the Main Pond. AMEC suggests a map be included to maintain a record of the approximate locations of any identified problems. A map could also be used to maintain a record of work performed cumulatively or since the last inspection. AMEC recommends annual visual inspections of each management unit should be performed by a Professional Engineer, either by a consultant or by internal, offsite personnel. Inspection reports are and should be maintained by the facility. Additionally, routine inspections (daily or weekly) performed by facility O&M personnel could be supported by an inspection checklist to serve as documentation of the inspection.

Vegetation on the impoundments should continue to be aggressively managed. We further recommend that vegetation be managed based on guidance in (a) Corps of Engineers EM 1110-2-301, *Guidelines for Landscape Planting and Vegetation Management at Floodwalls, Levees, and Embankment Dams* and (b) FEMA 534, *Technical Manual for Dam Owners: Impacts of Plants on Earthen Dams*. Additionally, animal impact should be mitigated based on guidance in FEMA 473, *Technical Manual for Dam Owners: Impacts of Animals on Earthen Dams*.

The paragraphs above in this section were provided in the draft report. Comments to the draft report by Alliant Energy states that subsequent to the ash pond assessments by EPA, "Alliant Energy has prepared a "Corporate Operations and Maintenance Plan" (Corporate Plan) that outlines the proper operations and maintenance of coal combustion ash ponds based on the guidance documents readily available from the Corps of Engineers; FEMA; and OSHA. In addition to the Corporate Plan, each generating station has a "Site Specific Operations and Maintenance Plan" (Site Plan) that defines the roles; responsibilities; and actions required by the generating station to ensure our ponds are maintained and operated in a safe manner now and in the future. As part of the Site Plan, a 3rd Party PE will inspect the site on an annual basis to evaluate the current conditions; evaluate maintenance activities; and provide additional guidance to improve the overall safety of the ponds. The inspection sheet has been revised accordingly to include monthly and more detailed quarterly inspection. We anticipate having this plan, including training; operational at the Sutherland Generating Station by December 31, 2012.

AMEC commends Alliant Energy's Corporate and Site Plan initiatives. Provided the maintenance issues described herein are addressed, the proposed inspections and subsequent maintenance will provide a means to monitor and maintain the overall condition of the ponds.